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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

November 19, 2009

TO: Internal File

THRU: April Abate, Team Lead GAA 12-16-2009

FROM: Priscilla Burton, Environmental Scientist III/Soils. PWB by SQS

RE: SUFCO MidTerm Review, Canyon Fuel Company, LLC., SUFCO Mine, C/041/002, Task #3407

SUMMARY:

The soils chapter 2 and the refuse information (volume 3) was reviewed. There is one deficiency:

R645-301-240, Section 2.2.4 (p. 2-10) should mention the available substitute topsoil located on interim seeded slopes above the parking lot and portals. This revision of Section 2.2.4 is not urgent and can be incorporated into the next soil permitting action. i.e. as-builts of the overflow pond or west portal development.

There is a total of 1,283 cu yds available for reclamation at the mine site. Topsoil will be returned to point of origin. The permittee has identified 2,160 cu yds of subsoil stored in the substation bin wall and 5,300 cu yds of road base and 2,224 cu yds subsoil stored at the waste rock site that is available for use as substitute topsoil during final reclamation of the remainder of the 28.4 acre site that is described in MRP, Sec. 116.

The design capacity of the 4.5 acre waste rock site is 204,700 tons (Vol. 3, Sec. 4.2). If the remaining cell holds $1/5^{th}$ of the total capacity, or 40,000 tons, the life expectancy of the waste rock site would be 12 years at the current rate of transport (3,200 Tons/yr). Rates of transport may increase with the proposal to develop the west lease portals.

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TECHNICAL ANALYSIS:

OPERATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Topsoil Removal and Storage

Several small topsoil stockpiles have been segregated and protected (Vol. 1 Section 2.3.1.1 and 2.3.1.4 and Vol. 3 Sec. 3.1.6). They are as follows:

Mine Site Stockpiles (Plate 5-2Av15) :

1,200 cu yd stockpile located adjacent to the sediment pond; the 27 cu yd substation pad stockpile; approximately 2,000+ cu yds will be stockpiled from the proposed overflow pond construction.

Waste Rock Stockpiles (Vol 3, Map 4):

56 cu yd water tower stockpile;
1,200 cu yds of topsoil stored at the waste rock site for reclamation of subsoil stockpile storage area;
2,224 cu yds of subsoil;
fenced sediment pond topsoil pile (unspecified volume).

Link Canyon (Plate 5-2E and F):

38 cu yd Link portal stockpile ; 118 cu yd #2 substation;

There is a total of 1,283 cu yds available for reclamation at the mine site. Topsoil will be returned to point of origin. The permittee has identified 2,160 cu yds of subsoil stored in the substation bin wall and 5,300 cu yds of road base and 2,224 cu yds subsoil stored at the waste rock site that is available for use as substitute topsoil during final reclamation of the remainder of the 28.4 acre site that is described in MRP, Sec. 116.

Substitute topsoil is also located in restored (seeded) slopes at the mine site (pp. 2-10 and 2-23), including the interim seeded slopes above the parking lot and portals, although not specifically mentioned (personal communication with Mike Davis, November 24, 2009).

Final reclamation grading of the mine site is described in Section 5.4.2.2 and Appendix 2-4. Cut/Fill estimates superceding those in App. 2-4 are presented in Appendix 2-5. Approximately 74,000 cu yds will be moved. Final reclamation contours are shown on Plate 5-3A & B. Cross sections that illustrate cut and fill areas are shown on Plate 5-4. A six inch substitute topsoil layer is described in Section 2.3.3.2.

Findings:

R645-301-240, Section 2.2.4 should mention the available substitute topsoil located on interim seeded slopes above the parking lot and mine office building.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Refuse Piles

The waste rock site is 7.223 acres total (Vol 3, Sec. 4.3), with 4.5 acres of waste rock storage (Vol 3, Sec. 3.4). The dimensions of each waste rock cell is approximately 1.5 acres (300 ft x 200 ft) as described in Vol 3, sections 3.3. and 4.2. The maximum height of the waste rock fill is 30 ft. (Vol. 3, Sec. 3.1.4).

The design capacity of the 4.5 acre waste rock site is 204,700 tons (Vol. 3, Sec. 4.2). Map 2 shows final contours. If the remaining cell holds $1/5^{th}$ of the total capacity, or 40,000 tons, the life expectancy of the waste rock site would be 12 years at the current rate of transport (3,200 Tons/yr). Rates of transport may increase with the proposal to develop the west lease portals.

The waste rock site has been contemporaneously reclaimed (Vol. 3, Section 3.4). Map 4 of Volume 3, illustrates the status of reclaimed, active and topsoil salvage areas at the refuse site as of August 2005. Map 4 shows the first three cells reclaimed. Cell #3 of the waste rock site was seeded in November 1998 (email from Mike Davis 11/19/2009). Cell #4 was started in 1998 and completed in the fall of 2009. Cell #4 has been topsoiled and gouged and is scheduled to be seeded this fall (see photographs in image folder 11182009). Vol. 3, Section 3.2.4 specifies a thirty inch cover depth over the waste rock site which was confirmed for cell #4 during a site inspection on 11/18/2009. There is a final remaining cell.

The current rate of transport is approximately 3,200 Tons/yr, but the volumes may increase with the proposal to develop the west lease portals.

Findings:

The information provided in the MRP meets the spoil and waste, refuse pile requirements of the Regulations.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Acid- and Toxic-Forming Materials and Underground Development Waste

Sampling of the waste quarterly during periods of waste hauling is described on page 3-4 of Vol. 3. The 2008 Annual Report contains a summary of all chemical analysis of the material stored in at the waste rock site since 2005 (Annual Rpt, App. B). The earliest waste rock analyses are located in Vol 3, Exhibit. 5 and in Appendix 6-2 (confidential).

Findings:

The information provided meets the requirements for hydrologic acid/toxic identification requirements of the Regulations.

RECOMMENDATIONS:

The information previously requested through the mid-term review of the MRP has been provided. The Division should express appreciation for the Permittee's cooperation in keeping the MRP up to date.

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